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ABSTRACT

Impromptu speech is characterized by the simultaneous processes of ideation (the elaboration and structuring of reasoning by the speaker as he improvises) and expression in the speaker. Other elements accompany this characteristic: division of speech flow into short segments, acoustic relief in the form of word stress following a pause, and both accidental and deliberate redundancy. It is the presence of all of these characteristics that helps the listener understand the speaker's meaning. Because these elements affect both perception and comprehension, the entire processing of language is facilitated. (MSE)

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WHY IMPROMPTU SPEECH IS EASY TO UNDERSTAND

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Why impromptu speech is easy to understand

Abstract: This paper deals with the consequences of the concomitance of ideation and expression in the impromptu speaker. The tangible marks left on speech by ideation are discussed, as well as the effect these marks have on the listener's perception and comprehension of the speaker's meaning.

Introduction

Anyone with the least experience in listening to speeches such as those delivered during international conferences can bear witness to the fact that the sense of an improvised (i.e. unscripted) speech is easier to understand than that of a speech drafted in advance and read aloud or recited by heart.

But what are the reasons for this phenomenon?

In an attempt to answer this question, I conducted a study of the incidence of the form of delivery on the comprehension of professional interpreters during simultaneous interpretation.

Simultaneous interpretation is, in fact, a particularly interesting sphere of investigation because of the interpreter's heightened sensitivity to any factor interfering with an immediate comprehension of the speaker's meaning. This sensitivity is the result of three implications of simultaneous interpretation not present – at least not all present at one time – in other communication processes.

In the first place, the simultaneous interpreter is at once both listener and speaker. This double function divides his attention and requires that the speaker's meaning be easily apprehensible, all the more so since it must be grasped instantaneously.

Secondly, the interpreter acts as receiver of a message intended for someone else (Moskowitz, 1973). He must instantly comprehend the sense of a speech designed to be understood, not by laymen such as himself, but by the expert to whom it is directed.

Finally, in spite of the aforementioned obstacles, the interpreter must fully understand the total sense of the utterances so that he can then restate it in his own words in the target language (Seleskovitch, 1968, 1975, 1976, 1977).

Simultaneous interpretation can thus reveal mental mechanisms of perception and comprehension operating in every listener, yet inaccessible to study until brought into evidence by an activity depending entirely upon them and sensitive to the least interference with them.

To conduct my study I recorded a number of speeches, both impromptu and read, delivered in French during the course of actual conferences. Their German interpretation was recorded on the same tapes.

In addition to this, I asked fifty of my colleagues, chosen at random, the following questions: Do you find the simultaneous interpretation of a speech read aloud to be more difficult than that of one that is improvised? If so, to what do you attribute this difficulty?

The interpreters were unanimous in their affirmative response to the first question. As for the second, the main reasons cited for the difficulties were:

- the speaker's reading aloud instead of thinking aloud (cited 28 times);
- speed of delivery during reading (cited 22 times);
- the monotonous tone produced by a reading (cited 26 times);
- the absence of redundancy in a written speech (cited 18 times).

Consideration of these results in the light of twenty years of experience as a professional interpreter led me to the following hypotheses:

– The facility of comprehension experienced by the listener during an impromptu speech is the result of the activity of *ideation*, that is to say, the elaboration and structuring of reasoning accomplished by the speaker as he improvises.

– Because the listener is unable to read the speaker's mind, this activity of ideation is imperceptible to him. He can only become aware of the speaker's reflection through certain tangible characteristics of his speech, and these tangible marks left on speech by ideation are what makes a communication more readily comprehensible.

– These marks are essentially *sentence segmentation*, *prosody* and *redundancy*.

I. Sentence Segmentation

An improvising speaker's rate of delivery in words per minute is not always slower than that of a speaker reading aloud, and in fact, can even be much faster. However, what I call the *objective* rate of delivery, because it is measurable, holds implications only for the speech as emitted by the speaker and bears little impact on the listener, for whom the rate of delivery is *subjective*.

This fact was clearly demonstrated in several instances by the striking discrepancies noted between the measured rate of delivery of the recorded speeches and the sensation of speed voiced by the interpreters who had translated them. Further evidence was provided by some of the recorded interpretations, which, in spite of a slow objective rate of delivery, revealed signs of increased stress due to the pressure caused by a lack of sufficient time. Inversely, the interpreters seemed relaxed at times even when the rate of delivery was rather fast.

Two factors account for the subjectivity of the listener's perception of the speed of delivery. The first of these is the degree of redundancy the speech holds for him. This aspect of the question will be treated in more detail in the section on redundancy.

Secondly, the sensation of speed experienced by the listener apparently depends largely on interruptions in speechflow. During examination of the recorded speeches it was found that the length of sentence segments (that is to say, the size of phrase sections located between two pauses) was smaller in the impromptu speeches than in those drafted in advance, even when the latter were read with a relatively slow rate of delivery. Sentence segments in the impromptu speeches contained from 1 to 9 words as opposed to from 3 to 23 words for texts read aloud. In the former case, most segments were composed of less than seven words, whereas in the latter there were generally more than seven.[1]

The primary reason for this difference is the conceptual effort furnished by an improvising speaker and the absence of such an effort when a text is read aloud. During impromptu speech, the process of ideation and the activity of expression are concomitant, yet selections made on the paradigmatic axis are not always instantaneous. This results in frequent interruptions in speech-flow, as pauses of hesitation are added to juncture pauses. Thus the activity of ideation is evidenced in speech through moments of hesitation which in turn reduce the number of words pronounced in a single segment.

According to my findings, the perception of short segments gives the listener the impression of a slower delivery than the perception of long segments, even if the objective rate of delivery is identical in both cases.

An explanation for this phenomenon may be provided by the limited capacity of auditory memory. To my knowledge, others (Peterson 1959, Baddeley and Warrington 1970, Delay 1970, Lieury 1975, Marfeld 1973, among others) have defined this capacity either by the memory span, measured by the number of words which can be restated after a single hearing, or by its duration, measured by the number of seconds during which the acoustic perception is remanent. In both cases the related experiments consisted of auditorially presenting various numbers of words, digits or syllables to subjects, and having them repeat each series immediately afterwards.

In my opinion, to obtain a clearer understanding of the capacity of auditory memory, total retention time should be divided into two periods: the period during which perception occurs and the period during which what has been perceived is still remanent. For example, a few seconds are needed to perceive the series of digits 8 9 4 7 6 3 1, and during this time, each digit remains in the memory. Thus, the digit 8 is remanent while digits 9 4 7 6 3 1 are being perceived, 9 is retained during perception of 4 7 6 3 1, and so on. I call this first retention period *intra-perception remanence*.

After perception, the mnesic presence is extended for a few seconds, during which the entire series of digits can be mentally reheard. I use the term *post-perception remanence* to refer to this second period of the total retention time.

As several researchers have demonstrated, when the number of elements in a series exceeds a certain limit, it becomes impossible to conduct an integral second hearing of the perceived series (Miller 1956, Dallet 1964, Neisser, Hoening and Goldstein 1969, Mills and Martin 1974, 1975, Martin 1975). This limit appears to be about seven elements. Since the time needed for the emission of seven elements in these experiments was only a fraction of auditory memory's total retention duration as measured by other researchers, it seems probable that auditory memory capacity is *two-dimensional*, depending on the factors of *space* (span) *and time*, and that the latter factor is partially neutralized when the elemental extent of the perception exceeds the memory span.

The above-mentioned experiments measured auditory memory's retention capacity for series of elements lacking in meaning and followed only by silence. If, however, their results are applied to the perception and comprehension of meaningful utterances, then the total duration of remanence is no longer of interest to us, because the juncture or hesitation pauses occurring in real speech are generally much shorter than the normal period of post-perception remanence in the absence of renewed stimulation of the auditory memory. During normal listening conditions, the determining factor is the retention of each perceived segment in its entirety during the juncture or hesitation pause which follows it. If the auditory memory is to operate effectively during the audition of a speech, the length of these perceived sentence segments must not exceed the memory span, and the segments must be retained long enough to allow for the processing necessary to their comprehension.

At this point we will reconsider my observation that whatever the objective rate of delivery, a speech divided into segments containing less than seven words seems on the slow side to the listener, whereas one divided into segments of more than seven words seems rather rapid.

In my opinion this impression can be explained, at least in part, by the relationship between segment size and the scope of auditory memory. If segment size does not exceed the memory span, the meaning of each group of perceived elements may be apprehended during the pauses separating the segments, while all of the perceived elements are remanent. These pauses may also be used to consciously 'auscultate' the auditory memory, in an attempt to rehear a specific word or digit which did not contribute to meaning comprehension and which must thus be reintegrated into the apprehended sense of the utterance.

On the other hand, when the speech is made up of segments exceeding the auditory memory span, perception of the first part of the segment is, if not entirely, at least somewhat erased immediately afterwards by that of the remaining part. The first part of the segment is thus unable to undergo normal post-perception remanence processing. Consequently, if its meaning is to be understood, this comprehension must occur at the very moment of perception.

This lack of time available for congnitive processing is responsible for the listener's impression of fleeting perceptions, mistakenly attributed by him to the speaker's rate of delivery.

The incidence of speech-flow interruption in listener comprehension is an inverse function of the communications *redundancy* level for the listener, for two reasons.

To begin with, the less redundant the speech seems to him, the more diacritical elements he must perceive in order to grasp the speaker's meaning. In a speech holding little or no redundancy for the listener, the memory span will be automatically exceeded if the speech is divided into long segments. However, when the cognitive content of a communication is partially known to the listener, the quantity of linguistic elements that must be perceived in order for the speaker's meaning to be completely understood may well be within the scope of the memory span.

Secondly, the less the listener expects what he hears, the more comprehension tends to lag behind perception and to depend on the following pause. If part of the perception is erased before the pause, and thus before it can undergo the processing necessary to comprehension, understanding of the perceived utterance will be at best incomplete. This lag in comprehension becomes especially apparent when we hear a joke. Our comprehension and laughter occur not during the punch line, but after it, because the goal of the joke is to surprise us with an unexpected ending (no laughter without surprise!). If perception of the punch line were to be immediately erased by a following perception, there would undoubtedly be no laughter at all.

To sum up what has been said so far, evidence suggests that one of the characteristics of impromptu speech which facilitates listener comprehension is its division into short segments, as a result of the concomitance of the processes of ideation and expression.

II. Prosody

In general, one can tell from hearing only the first sentence of a speech whether it is improvised or read from a written text. However, in both cases the speaker usually pronounces his first sentence in a rather neutral voice which gives the listener no clue as to how lively or monotonous he can expect the coming speech to be.

These observations lead us to deduce the existence of a phenomenon independent of the quality of improvisation or reading. If we know from the

first sentence that the speaker is reading, it is not because we have already evaluated the quality of his performance; we have not yet heard enough to make such an evaluation. Our certainty comes rather from a subtle difference in the characteristics of speech-flow as produced by an improvisation or by a text read aloud. Whereas the former seems to catch our attention, the read speech lacks relief, slipping by without penetrating our sense of hearing and without leaving an impact on it.

Although a text which is poorly read does accentuate the flatness of speech-flow, it is actually only adding to the effects of that factor mainly responsible for the type of speech-flow characteristic of a text read aloud: the lack of hesitation pauses.

In the preceding section on sentence segmentation it was seen that, because selections made on the paradigmatic axis are not always instantaneous, speech-flow during an improvisation is interrupted by frequent hesitation pauses. It appears that words which the speaker pronounces only after such a moment of hesitation often seem particularly stressed to the listener, as though they are pronounced with greater energy and more emphasis than the other words in the sentence, giving the statement a marked *'acoustic relief'*.

This acoustic relief appears to be conducive to the auditory perception of speech, and thus indirectly to comprehension of the speaker's meaning.

The following hypotheses attempt to explain the *formation of acoustic relief*.

– Hypothesis 1: The speaker deliberately stresses those words which, because of their perceived pertinence to comprehension of his meaning, have merited careful selection on the paradigmatic axis. The insistence with which they are pronounced is reinforced by the dynamism that the speaker confers on his thoughts through his will to express them.

During a reading, on the other hand, even if the reader thinks along with the text, the dynamic force of the thought is never as great as at the moment when it is first expressed, that is, when the speech is written. Consequently, the words are not stressed as intensely as during an improvisation, and acoustic relief is relatively weak.

– Hypothesis 2: Evidence suggests that hesitation pauses, especially when silent, also contribute *directly* to the formation of acoustic relief. Unlike juncture pauses, silent (or unfilled) hesitation pauses are generally accom-

panied by a momentary blocking of expiration. Consequently, the following word is pronounced under pressure from the breath held in during the pause. It seems probable that, just as in a hydraulic system the retention of water increases its potential force, so pressure from the retained breath builds up during the silent pause acting as its dam. When the dam gives way, the explosive release of the withheld breath creates a more marked stress on the word responsible for its retention.

This hypothesis is supported by evidence from one of the recordings studied: the interpretation of a speech read at a high objective rate of delivery (168 words per minute) and divided into segments of up to 23 words. The interpreter, obviously rushed, omits a large number of juncture pauses and uses his hesitation pauses for breathing. Because breathing is not blocked during the hesitation pauses, the acoustic relief is less pronounced than it ordinarily is in impromptu speech. The words following hesitation pauses are not particularly stressed, and the speech-flow bears more resemblance to that of a reading than an improvisation.

A second confirmation of this hypothesis may be obtained by noting the lesser effect of filled pauses on acoustic relief. While listening to the various recordings I observed that, in fact, words preceded by filled hesitation pauses seem to be pronounced with less stress than those following silent hesitation pauses. This phenomenon could be explained by the fact that expiration is not blocked during a filled pause. Thus, the word following the pause is emitted without the added force provided by the release of a retained breath.

– Hypothesis 3: There may be a further explanation for why silent hesitation pauses in particular contribute to the formation of the acoustic relief typical of improvisations. C. J. Darwin (1975) describes an experiment conducted by A. Cutler showing that the listener pays special attention to the word following a pause. Darwin suggests that the accentuation perceived by the listener does not necessarily depend on the actual stress given to the word, but rather on the prosodic pattern of the emission preceding it.

If we accept this hypothesis, it follows that since the hesitation pause, unlike the juncture pause, cannot be anticipated by the listener, its appearance increases his vigilance and sensitivity to possible accentuation of the following word, all the more so if the pause is silent.

Boomer and Dittman (1962) illustrated the listener's increased sensitivity to silent hesitation pauses as opposed to juncture pauses by showing that the

former can be perceived from a duration of only 200 msec., whereas the latter are generally perceived after a duration of about one second.

If silent hesitation pauses draw the listener's attention even when they are of very short duration, it is not unlikely that the sound perceived following the pause seems to the listener to be pronounced with more force than a sound following another sound. Thus, a word preceded by a silent hesitation pause would seem to him to be more stressed than a word preceded by a filled pause or another word.

In summary, the acoustic relief specific to impromptu speech appears to be the result of a combination of factors: the dynamic force of a thought in the course of its first expression reinforces the stress that the speaker deliberately places on certain words. This stress is underlined by silent hesitation pauses, on the one hand, because of the momentary stoppage of breathing and subsequent explosive release of air which they provoke, and on the other, because of the contrast felt by the listener between the sound of the word and the silence preceding it.

What influence does acoustic relief have on the listener's perception and comprehension?

We have already seen that as a result of acoustic relief the speech-flow of an impromptu speech seems to catch one's ear, whereas an address read aloud seems to slide by flatly, even when it is not monotonous. It clearly follows that acoustic relief influences message perception and comprehension.

This influence may be explained by the fact that hesitation pauses generally precede content-words,[2] causing these semantic indicators to stand out in the speech-flow of an improvised address. This accentuation can only facilitate their perception, and consequently, comprehension of the speaker's meaning, since they are the words most pertinent to an understanding of that meaning.

It appears, in fact, that during perception of an utterance, it is mainly the content-words that are apprehended. The more familiar the listener is with the syntax of the language used, the less he will record the accompanying linguistic elements that serve to structure the message syntactically, since his knowledge of the given language allows him to reconstitute those elements at will. As a result, they are only noticed when incorrect.

This is especially apparent in the case of foreign language use. Once what Bodmer (1949) calls the 'traffic rules of language' are passively known, structural linguistic elements are no longer perceived during listening. Only content-words are actually perceived, and thus rapidly, and in general, accurately recorded by the memory. This process is illustrated by the fact that structure-words are subject to numerous and tenacious errors during expression in a foreign language, in my opinion because they generally pass unperceived. According to my experience, it is difficult to even deliberately pay attention to structure-words. A determined student may accomplish this only through much practice and intense concentration (Déjean Le Féal, 1976).

The listener, besides perceiving only content-words, does not pay equal attention to *every* content-word in a sentence. In order to understand the sense of a statement, he uses his knowledge of the subject being discussed to reason along with the speaker, or even to reason ahead of him. Thus, the only diacritical elements he extracts from the speech are those which allow him to line up his train of thought with the speaker's. As we have seen, those content-words which follow a speaker's hesitation pauses seem to be uttered with added stress, partly because they have been deemed essential enough to merit careful selection on the paradigmatic axis. It is likely, therefore, that they will correspond to the very content-words selected by the listener as aids in following the speaker's train of thought.

We know that every perception implies an activity of *organization* and *structuring*. If the laws of perception as studied by the gestaltists are applied to speech perception (Hörmann, 1976), it follows that the words pertinent to meaning comprehension are perceived by the listener as figures situated against a background of accompanying words. The more relief these figures have to clearly differentiate them from the background, the better they will be perceived and analyzed by the listener. In other words, the marked acoustic relief of impromptu speech frees the listener from part of the activity of organization and structuring implied by perception, thus facilitating comprehension. In order to instantly apprehend the meaning of a message read aloud, on the other hand, the listener must make an effort analogous to that needed to grasp at a single glance the subject of a painting in which the principle figures and objects, described with vague outlines and faded colors, seem to blend into the background.

To sum up, it appears that the hesitation pauses characteristic of improvisations contribute to the formation of an acoustic relief particularly conducive to auditory perception, and thus to an instantaneous comprehension of the speaker's meaning.

III. Redundancy

What is meant by the term redundancy? Its definition includes both that redundancy inherent to language and that which appears at the level of meaning. Only the latter is likely to be lacking in written speeches, since the redundancy inherent to language, whether phonological, grammatical or morphological, can neither be increased nor diminished by the speaker. It is an integral part of the language system, and must be respected as such by those who express themselves in a given language. Only redundancy of meaning is variable, and likely to depend on whether a speech is improvised or written.

For this reason my discussion will be limited to redundancy of meaning, which will be treated under two headings: *accidental redundancy* and *deliberate redundancy*.

Accidental redundancy refers to errors occurring in the process of expression – restarts, repetitions, etc. – which, during improvisation, produce redundancy not intended by the speaker.[3]

One of the *causes* of accidental redundancy appears to be the *gap between the speaker's speed of ideation*, determined by the intellect and generally constant for a given subject, and his *rate of delivery*, which depends on temperament and emotional state.

When comparing the rate of delivery at the beginning and end of relatively long communications, I observed that it progressively increased, whereas the speed of ideation seemed to remain constant, or even decrease as a result of fatigue. Consequently, redundancy was greater towards the end of the communications.

The extent of the lag occurring between ideation speed and the rate of delivery is undoubtedly not the same for every individual, since some people express themselves more redundantly than others; yet passages illustrating this lag can be found in any improvisation.

Involuntary though it may be, this type of redundancy *plays an important role for the listener*, because by diluting the idea-content of statements it facilitates comprehension. Indeed when listening to a message, it is not the words that we are after, but the sense. Because redundancy increases only the *'word-envelope'* of idea-content, without increasing the actual number of ideas, the listener has more time to analyze the meanings he has just apprehended. A better comprehension results than when the listener's mind is packed with ideas which he does not have time to correctly process.

The time needed for analyses of the speaker's meaning is naturally not the same for every individual, but depends on the rapidity of his intellect, his concentration ability, and especially on the knowledge he has of the subject in question.

The importance of this knowledge of subject matter is by no means negligible. If the listener is to instantly grasp the sense of a statement, his knowledge of subject, speaker and circumstances must be mobilized and combined with the perceived meaning of the words to create a synthesis. This mobilization of knowledge is indispensable, first of all, for the correct word to be associated with an ambiguous sound wave. As Denes and Pinson (1970) have emphasized, sound waves produced by two pronunciations of the same word are not always identical, and inversely, waves produced by the pronunciation of different words may be very similar.

What is more, a certain anticipation on the part of the listener, based on his knowledge of the subject, is essential if he is to attribute the correct contextual significance to perceived words. How else could one explain that, in a discussion on corrosion, for example, when the English use the words 'iron' and 'ion' in a similar context and pronounce them identically, experts immediately know if they must understand 'iron' or 'ion', whereas the layman must rely on guesswork. If the expert's knowledge and anticipation did not enable him to attribute the proper meaning to the perceived sound, some device would have been long since developed to eliminate this kind of ambiguity during such discussions.

The sense understood by the listener is thus based on his preexisting knowledge on the one hand, and on indications given by the meaning of the words of the message on the other. However, even in the case of a listener who is an expert on the subject in question, physiological factors such as intellect, concentration ability and fatigue may limit the rapidity with which ideas can be

processed. The time that the listener has available for analysis of the speaker's meaning is thus an important factor in comprehension.

Whereas the speaker can control accidental redundancy only indirectly, by increasing or diminishing the gap between his rate of delivery and speed of ideation, he can *directly use deliberate redundancy* to make himself better understood. Deliberate redundancy amplifies what is explicit in a speech as it diminishes what is implicit. An illustration of this is seen in the oral version of a report presented by one of the recorded speakers. He provides an explanation of the term 'réseau urbain', whereas its definition is only implied in the written version handed out before the speech.

Text	*Oral Version*
'Long de 177 km, le métro urbain comprend 16 lignes et 347 stations.'	'Le réseau urbain, contenu à l'intérieur de la ville de Paris, de l'ancienne ville de Paris, c'est-à-dire qui ne comporte pas la banlieu, a une longueur de 117 km; il comporte 16 lignes de métro et 347 stations.

To label this explanation as redundant implies that the listeners already know what is meant by 'métro urbain'. This was undoubtedly the case for Parisians listening to the message, and probably for the listeners from the provinces as well, but not nessarily for foreigners who may have been visiting Paris for the first time in their lives. We see from this that, unlike accidental redundancy, it cannot be judged according to objective criteria, but depends for every listener on the relation between what he already knows of the speaker's meaning and what the speaker communicates explicitly. The more the listener knows about a subject, the more redundant a speech on that subject seems to him, whereas the same speech may appear to be full of obscure implied meanings to a less informed listener.

In addition to his knowledge of the subject, another factor which can modify a listener's perception of redundancy is the *use* he makes *of that knowledge* to understand the speaker's meaning. A specialist with an expertise equivalent to the speaker's on a given subject understands the latter's intended meaning by using his knowledge to analyze the message's sense. If, however, he is inclined to allow his own knowledge and train of thought to

take precedence over the speaker's, he may understand only what subject is being discussed, without immediately grasping *what the speaker is actually saying*. To get his ideas across to such a listener, the speaker must be more explicit than for someone who, possessing similar knowledge on the subject, uses it to apprehend the sense of the utterance. What the speaker says (as opposed to what he is speaking about) will inevitably seem more redundant to the latter. I refer to the listener's use of his knowledge on a subject to understand the speaker's meaning as his *'receptivity'*.

The listener's impression of the speaker's redundancy depends thus on how his knowledge and receptivity relate to what is explicit in the message.

Do improvising conference speakers and those presenting written texts take the audience's receptivity into equal account? It appears that whereas an impromptu speaker attempts to evaluate his listeners' knowledge and receptivity in order to be explicit enough to be understood without boring them, the conference speaker who writes his speech ahead of time considers only the listeners' knowledge and disregards the question of receptivity. This is because, when writing, he automatically addresses readers, even if he knows that his report will be presented orally.

One recorded speaker gave a clear demonstration of this when he read the following passage: *'Le premier objectif, c'est, en effet, d'opposer la politique du vécu à la politique du discours. Il faut en finir avec les ténors, avec les joutes oratoires...'*[4] Only after having read these sentences aloud did the speaker realize, with the help of the audience's laughter, that merely pronouncing these sentences behind a conference room microphone had imbued them with a meaning they did not have on paper. The speaker hurriedly added: *'et c'est très difficile à dire pour un homme derriere un micro.'*[5] If, while writing his speech, he had imagined himself speaking into a microphone before his audience, he would certainly have realized sooner the probable effect of this passage.

The listener, unlike the reader, perceives the sense of a message according to the circumstances in which it is pronounced. Because the speaker is in the same situation as himself, the listener assumes that the speech will take that situation into account.

The reader, on the other hand, does not consider the circumstances in which he is reading because he knows that they have no relation to the author's message. As for the latter, because he wants his text to be under-

stood by all who read it, whatever their situation, he writes without taking his own circumstances into account.

The author does not consider his readers' receptivity any more than he considers his own situation. This would be impossible, since lacking any contact with them, he has no way of judging their receptivity. Besides, he can be relatively sure that his text will only be read by receptive readers. In general, the choice of reading material and the act of reading itself are initiatives for which the reader must be motivated by his interest in the author's ideas, or at least by his will to understand them. His receptivity is the only motivating force capable of making him continue through a text. If it falls beneath a certain limit, whether through lack of interest, fatigue, or for any other reason, the reader ceases his activity, because there is no longer any driving force.

For the listener, receptivity also acts as a motive force, since it is a condition for the act of listening. However, in certain cases, such as during international conferences, additional factors inherent to the situation may encourage the act of listening, even where there is a relatively low level of receptivity.

Let us take the example of an audience whose ideas on the problem under discussion are not in accord with those of the speaker. As readers, they would waste no time putting the text aside, not judging its content interesting enough to warrant examination. However, as listeners in the presence of a live speaker, their interest depends not only on what he says, but on how he says it, on his very presence, etc. Perhaps one member of the audience listens in the hope of refuting the speaker's arguments during the debate. He certainly would not read a text simply to be able to write a letter of disagreement to the author afterwards. Another may stay only to participate in the vote to be taken after the speech. Besides, it would be discourteous to get up and leave the room with the speech in progress. Whereas reading requires initiative and personal effort, listening to a speech is the easy alternative for a conference participant. Not to listen would require more motivation than to stay in the room and hear the speech.

The impromptu speaker, moved by a desire to communicate, attempts to make up for his listeners' lack of receptivity by explaining his ideas more explicitly. Thus, if his report must be presented at the end of a long session, he realizes that his audience may be too saturated to be fully receptive. As readers, they would probably save the next chapter for later. As listeners,

they must choose between attending to the speech in spite of their fatigue, and missing out on it entirely. The speaker, probably sharing his listeners' fatigue, takes the disadvantageous circumstances into account by insisting on those ideas which seem most important to him, hoping that, thanks to this redundancy, they will be understood. And, in fact, even if the listener's attention wanders occasionally, this redundancy offers him a second, or even a third chance to grasp the essential points.

If the speaker had written out his report in advance, he could not have foreseen the conditions of its presentation. What is more, we have already seen that, as an author, he would have been addressing readers rather than listeners. The idea of making up for their lack of receptivity by being deliberately redundant would not have occurred to him. This is only natural, since the reader, if his fatigue does not cause him to put down the text altogether, can always back up and reread certain passages when he realizes that he has been sweeping over them without recording the meaning of the perceived words in his memory.

The listener, on the other hand, cannot back up. The speaker must therefore furnish him with an equivalent failsafe device in the form of redundancy.

As we have already seen in the example of the 'métro urbain', a conference speaker facing a live audience seems less confident of their knowledge on a given subject than when he is preparing a written speech. As an author, he apparently supposes that if an idea in his line of reasoning escapes the reader, a few moments of reflection will enable him to reconstruct the missing link. He considers that a good reader will frequently interrupt his reading to analyze the apprehended sense.

The listener, however, cannot indulge in such reflection without the risk of missing the following part of the speech. Thus, a conference speaker uses varying weights and measures when evaluating the knowledge of those to whom his message is directed, depending on whether he is writing his text or giving an impromptu speech. In the former case, he considers their knowledge and their capacity for reflection, whereas in the latter he takes their knowledge and receptivity into account, but does not rely on their capacity for reflection.

In summary, although deliberate redundancy is experienced subjectively by each listener as a function of his knowledge of the subject discussed and his receptivity, it is likely to be weaker for a given listener, all else being equal,

when the speaker reads than when he improvises. In the latter case, the speaker deliberately increases his explicitness (as opposed to being unintentionally redundant) in an effort to communicate his ideas and to gain the attention of the flesh-and-blood listeners seated before him. Since any such on-the-spot increase in the speaker's explicitness can only result from a concomitant process of ideation, in the last analysis it is the latter which causes a speaker to make himself better understood. This explicitness compensates for the listener's inability to back up or to take a few moments of reflection and insures comprehension where it would otherwise have been compromised by a lack of receptivity or insufficient preexisting knowledge.

Conclusion

If we accept the hypothesis that the division of speech-flow into short segments, acoustic relief and both accidental and deliberate redundancy all have as their origin the concomitance of the processes of ideation and expression in the impromptu speaker, then we must conclude that it is the presence of all these characteristics at one time (a necessary consequence of their common origin) that helps the listener to understand the speaker's meaning. Singly, each of these tangible manifestations of ideation would undoubtedly have little effect on comprehension; combined, they allow the listener to easily and instantly grasp the speaker's meaning. Because these marks left on speech by ideation affect both perception and comprehension of messages, the entire processing of language is facilitated.

On the other hand, this same hypothesis leads us to ask if one can term 'act of communication' a speech read aloud, which (with only rare exceptions) demands an intense effort on the part of the listener, who must process poorly structured perceptions without auditory memory's usual aid in order to instantly grasp complex reasoning contained in the barest of word envelopes. Isn't this rather a challenge thrown out at the audience? Can oral communication in the true sense of the term really exist in the absence of respect for the natural laws governing language perception and comprehension?

NOTES

1. Excerpts from two recorded speeches are presented here to illustrate speech-flow interruption during an impromptu speech and during a reading. The pauses are marked by slant lines:

Impromptu speech

'Jusqu'à présent/ les organismes d'intervention/ en matière de sucre/ tout au moins/ étaient des organismes/ passifs/ qui avaient pour/ objet/ d'acheter le sucre/ qui leur était proposé au prix/ d'intervention/ Par le jeu de l'article 9 bis/ ces organismes/ vont perdre leur caractère d'organismes passifs/ Ils vont/ devenir des organismes actifs/ qui vont prendre place sur le marché/ et acheter du sucre/ en principe/ aux conditions/ du marché/'

Text read aloud

'Résultat: aux parlements les femmes restent minoritaires. Les parlements sont toujours et encore des clubs masculins. Je ne citerai pas d'exemples étrangers/ pour ne pas être discourtois/ mais je citerai simplement l'exemple français: en France, 9 femmes députées sur 490 députés/ Est-ce assez? Bien sûr non/ Les femmes au gouvernement sont encore plus rares, même si le cas se vérifie moins, heureusement, en France aujourd'hui/ Mais dans beaucoup de pays du monde, on ne trouve aucune femme au gouvernement, voire plus simplement/ une seule femme/ Un peu comme si le mot ministre, après tout, ignorait le féminin pluriel/'

2. This fact, mentioned by several authors (Goldman-Eisler 1958, Tannenbaum, Williams, Hillier 1965 etc) was recently confirmed by an in-depth statistical analysis of hesitation phenomena conducted by Faure (1978).
3. A brief excerpt from one of the recorded improvisations is presented here as an example:
   'On se trouvait ... on s'est trouvé depuis quelques années au début d'une ... au début d'une ère ... pas d'une ère nouvelle, c'est beaucoup dire, mais quand même d'un ... d'un dynamisme technique et commercial ... d'un dynamisme technique et commercial tout à fait nouveau du transport ferroviaire.'
4. 'The first objective is, in fact, to oppose the politics of real life to the politics of speech-making. We must have done with star orators, with contests in eloquence...'
5. 'and for a man behind a microphone that's not easy to say.'

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